

**Recommended Procedure for Chlorine Disinfection of Water Wells  
 (Reference - AWWA A100-6, Standard for Deep Wells)**

**Introduction**

A water well should be thoroughly cleaned and disinfected with a strong chlorine solution after:

1. Original Construction
2. Any Repair or Maintenance
3. Flooding
4. A Period of Non-use
5. Two or More "Unsafe" Bacteriological Water Samples that are Traced to the Well

Adequate chlorine requires a certain chlorine dosage for a minimum contact time - 100 parts per million for 2 hours, or 50 parts per million for 8 hours, or 25 parts per million for 24 hours.

Chlorine for disinfection for these water systems can be either 5.25% sodium hypochlorite solution or 65% calcium hypochlorite powder. A 5.25% hypochlorite solution is common house-hold bleach such "Hilex", "Clorox", or "Purex" available at grocery stores and supermarkets. The 65% calcium hypochlorite powder is available from chemical supply houses and is known commercially as "HTH", Perchloron", or "Pittchlor".

Recommended Procedures

1. Determine the chlorine dosage for the desired contact time from the following table:

<b>AMOUNT OF CHLORINE NECESSARY PER 10 FEET OF WATER IN WELL</b>						
Inside diameter of well casing	5.25% Sodium Hypochlorite (Bleach)			65% Calcium Hypochlorite		
	100 ppm* for 2 hours	50 ppm* for 8 hours	25 ppm* for 24 hours	100 ppm* for 2 hours	50 ppm* for 8 hours	25 ppm* for 24 hours
1 ¼ inches	1/8 fl oz	--	--	--	--	--
2 inches	1/2 fl oz	1/4 fl oz	1/8 fl oz	--	--	--
3 inches	1fl oz	1/2 fl oz	1/4 fl oz	--	--	--
4 inches	1 ½ fl oz	3/4 fl oz	3/8 fl oz	--	--	--
6 inches	4 fl oz	2 fl oz	1 fl oz	1/4 oz	1/8 oz	1/16 oz
8 inches	7 fl oz	3 ½ fl oz	1 ¾ fl oz	1/2 oz	1/4 oz	1/8 oz
10 inches	10 fl oz	5 fl oz	2 fl oz	¾ oz	3/8 oz	3/16 oz
12 inches	2 cups	1 cup	1/2 cup	1 oz	1/2 oz	1/4 oz
18 inches	4 ½ cups	2 ¼ cups	1 1/8 cups	2 ½ oz	1 ¼ oz	5/7 oz
24 inches	7 ½ cups	3 ¾ cups	1 7/8 cups	4 ½ oz	2 ¼ oz	1 1/8 oz
36 inches	17 ½ cups	8 ¾ cups	4 3/8 cups	10 oz	5 oz	2 ½ oz

\* ppm = parts per million 1 heaping tablespoon of 65% chlorine powder = 1/2 oz. 8 fluid ounces = 1 cup

2. Prepare a chlorine solution, lift well pump, and pour the chlorine solution into the well.
3. Lower the pump and operate until a chlorine odor is noticed at all discharge points.
4. Leave the chlorine solution in the unit for the recommended contact time. Do not use the water.
5. At the end of the contact time, pump the well to waste until the chlorine odor cannot be detected. **DO NOT ALLOW THE WATER TO ENTER A RIVER, LAKE, OR STREAM.**
6. Pump the well for considerable period of time and collect a bacteriological water sample and submit it for testing.

<b>AMOUNT OF CHLORINE NECESSARY PER 10 FEET OF WATER IN WELL</b>						
Depth of Water in Well (feet)**	Well Diameter					
	6"	8"	10"	24"	32"	36"
10	1 c	1 c	2 c	3 qt	4 qt	6 qt
20	1 c	2 c	4 c	5 qt	8 qt	10 qt
30	2 c	4 c	3 pt	C = cup    pt = pint    qt = quart  <b><u>Too Much Chlorine is Better Than Too Little</u></b>		
40	1 pt	2 pt	4 pt			
60	2 pt	3 pt	6 pt			
80	2 pt	4 pt	7 pt			
100	3 pt	5 pt	4 qt			
150	5 pt	4 qt	6 qt			

\* Adapted from Manual of Individual Water Supply Systems, EPA Water Supply Division

\*\* In situations where it is inconvenient to determine depth of water or diameter of a drilled well, a minimum of 1/2 gallon of household bleach may be used for wells up to 8 inches in diameter with water estimated to be less than 80 feet. In case of a well yielding more than 50 gallons per minute, special procedures are required